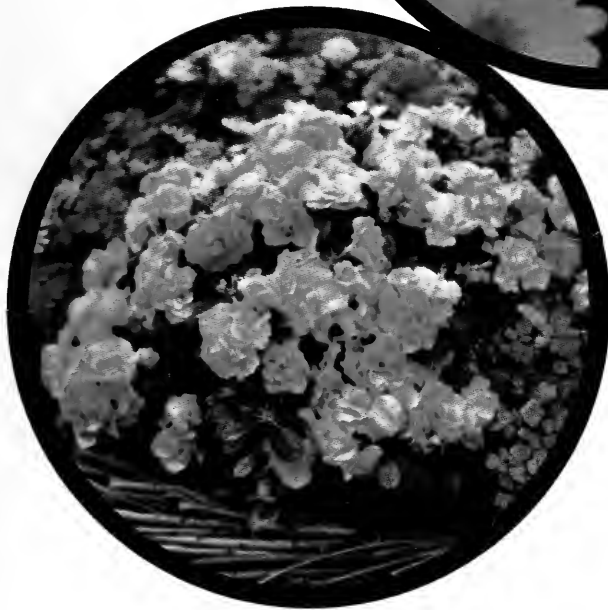
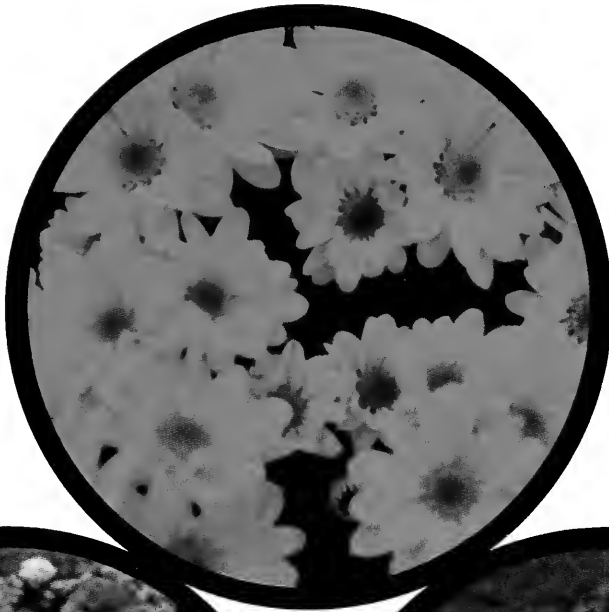




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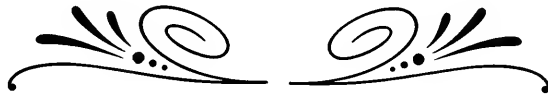


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# *Care of Potted Flowering Plants*



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Information Services

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## INTRODUCTION

Flowering plants are enjoyed throughout the year, but the best-known gift plants are associated with Christmas, Valentine's Day, Easter, Mother's Day and various other occasions. These plants have been grown in the controlled environment of a greenhouse. If they are to thrive, the first obstacle to be overcome is their transition from this 'ideal' environment to the home or apartment. In a greenhouse, light and humidity are excellent. The temperature is controlled and a 'natural' temperature drop occurs at night. Think of how different this is from the average home or apartment where there is less light, the air is drier and the temperature is more uniform and often higher than in the greenhouse. A plant put into such a home cannot be expected to do well until it has adjusted to its new environment. To reduce the shock of adjustment, avoid drafty locations and pay attention to the environmental needs of the plant. It is the balance of light, temperature, water and nutrition that will affect the plant's condition.

Many horticultural experts claim that people overwater, overfertilize, and overtransplant their houseplants. This publication will tell you how to avoid these mistakes.

## SOIL AND WATERING

You may assume that plants originating from a commercial greenhouse are growing in the right soil mix.

It is essential that all plants are potted in a well-drained soil mix. If there are no drainage holes in the pot, provide a drainage layer, about 3-4 cm of horticultural charcoal, when transplanting. Only transplant when necessary. In the meantime, you may find that pots without drainage holes need less frequent watering.

Decorative foil around the pot is attractive; however, it does not permit good drainage as it holds water that the pot sits in. Scratch a hole in the bottom and place in a saucer. Excess water can then be discarded about 15 minutes after watering. Never allow a plant to sit in water for longer than this.

Soil mixes need only 30-50% soil. The balance should be equal parts of some or all of the following — peat moss, vermiculite, perlite. This combination allows for a light, loose, airy mixture that breathes. At the same time, the peat moss helps retain uniform moisture so the soil medium does not dry out too quickly. A factor often neglected is that roots need oxygen. Avoid heavy, packed, clay-like soils.

A general rule to follow is that when you do water, water thoroughly.

Water should be left to stand overnight in an open container for two important reasons. First, it will reach room temperature, the best temperature to use on plants. Tap water is usually too cold or too hot; either can injure the roots. Second, the chlorine and fluoride in the water, also potentially harmful, will have time to escape.

Never use water that has passed through a water softener as it contains salts that will gradually become toxic to the plant.

## FERTILIZATION

The flowering plants that bloom for only a short period of a few weeks will not need fertilizer. Plant food is required for those plants that continue to produce new growth over a long season, or for plants whose growth-flowering cycle starts again after dormancy is broken. A word of caution; wait until the growth is well underway before starting to apply fertilizers.

A general rule is to supply plant food during periods of active growth. Don't assume a plant that looks scraggly or fails to produce flowers should be fed. Also, wait 3-4 weeks before feeding actively growing plants that have not yet acclimatized to a new environment.

Most important, when you do fertilize, don't overdo it. Too much plant food will burn the roots and may kill the plant. Follow the label directions of the product exactly. Several horticulturalists suggest you fertilize at half the recommended strength. This applies to all types of plant food: liquid concentrates that are diluted into a solution, tablets, granules, etc.

Remember, there are nutrients already in the soil. Also, organic nutrients generally do not burn the roots.

The soil should be damp when you fertilize. If dry, the roots will be injured by the fertilizer.

There are many fertilizer formulas available. The three sets of digits that identify a formula indicate the proportion of the three essential nutrients it contains: nitrogen, phosphorous, and potassium, always in that order. Suitable commercial fertilizers for flowering houseplants are evenly balanced ones such as 5-5-5, 10-10-10 or 20-20-20, or those with 1-2-1 or 1-2-2 ratios.

## LIGHT AND PHOTOPERIOD

Do not underestimate the need for light. Most of the flowering plants mentioned in this publication require bright indirect (diffused) light. Others need full sun (direct light) while a third group only requires partial shade. Partial shade does not mean that the plant should be placed in the darkest corner of the room; these plants can usually tolerate intensities that are fairly bright.

From November to January, the sun is not very intense and most plants requiring diffused light can tolerate its direct rays without damage to the foliage. However, the blossoms may be burned. Observation and corrective action is the rule here.

Another point worth considering is that plants requiring only diffused light may tolerate the weaker direct early morning or late afternoon sun without harm.

The above points are stressed because lack of proper light discourages flower development, retards growth and gives the plant an unhealthy appearance.

Just as the intensity of light is important, so is its other quality — duration. The exposure a plant receives in 24 hours is called the photoperiod.

Plants are thus classified into three groups — short-day, long-day, and indeterminate — referring to the effect of the length of day on flowering.

Examples of short-day plants are poinsettias and chrysanthemums. The duration of daylight they should receive to initiate flowering is relatively short, 10-13 hours, the remainder being a dark period. It has to be stressed that this must be a *continuous* dark period — uninterrupted and completely dark. Indoor lighting disrupts the dark period and must be avoided. Place the plants in unused rooms, cupboards or closets and then remove them at the same time each morning and put them in the appropriate light conditions.

Long-day plants are those that need 14-18 hours of daylight to blossom. This group is predominately made up of annuals.

Plants that will flower regardless of the length of daylight are called indeterminate plants. Included in this group are roses, gloxinias, and African violets. In general, longer exposure will usually make flowering more profuse.

It should be mentioned here that other environmental factors also affect the triggering of flowering. For example, temperature can contribute to the lack of blossoms, as can the maturity of the plant and its condition.

If natural light cannot be supplied, fluorescent lights or special plant lights are the best option. Ordinary incandescent light is insufficient to maintain plant growth.

It is a good idea to turn your plants regularly or they will become misshapen, as growth is favored on the side facing the window.

## **INSECTS AND DISEASES**

On receiving a gift plant, it is a good idea to keep it away from other houseplants for a couple of weeks. Examine both it and the soil carefully every 2-3 days to see that no insects or disease symptoms are present. Plants that have spent the summer on the patio or in the garden should be treated in the same manner. Consult a book on houseplants or a local nursery or florist for proper diagnosis and control recommendations. Alternatives to chemical insecticides are those derived from vegetative sources — the so-called 'botanicals' such as pyrethrum and rotenone. These are less hazardous to humans and do not have the unpleasant odors of some chemicals. A mild solution of dishwashing detergent and water will help control some insect pests but not fungi. Whatever the control method, repetitive treatments are recommended. A badly infested plant is best discarded.

Remember, a healthy, well-maintained plant is less susceptible to disease.

## **PLANT HYGIENE**

Plants breathe through minute openings called stomata on the underside of the leaves. Leaves that have a large surface collect a great deal of dust and should be wiped clean once a week with a damp, soft cloth. Support the leaves with the palm of the hand while wiping them, and clean both sides. Plant-shine products can be damaging to flowers and are not recommended.

Plants that have leaves with soft, hairy surfaces such as gloxinias, African violets and episcias should not be washed. Brush these clean with a small, soft-bristled artist's brush.

By cleaning your plants regularly, they will receive more light, breathe better, and appear more attractive. Remove spent flowers and foliage that has yellowed.

## CARE DURING YOUR ABSENCE

If you are going away, you can always ask friends or neighbors to care for your plants. Remember, however, that although usually very willing, these people are not always dependable. Instead, you might try the following, which will ensure the plants keep well for as long as a couple of weeks.

Remove your plants from strong light; they will require less moisture. Lower the temperature as well since plants use less water at reduced temperatures.

Plants will lose less moisture if the humidity around them is kept up. Do this by grouping the plants together or by wrapping a large transparent plastic bag around the pot or pots. Leave one end partially open to prevent excessive condensation.

For periods of 2 weeks or more, your bathtub, sink, or other basin will help provide a sustaining environment for your plants. Fill with water to a depth of 4-5 cm and place the potted plants just at or above the water level. You may have to sit them on empty pots placed upside down. Don't let them sit in the water. You could also cover the whole basin with a plastic sheet.

A few weeks before leaving you can actually slow down foliage growth by watering less frequently. However, when you return you will probably still notice pale and stretched new growth. Prune this back and return the plants to a bright location.

Self-watering wicks, automatic light-controlling devices and other gadgets may be useful.

The following pages summarize basic care for the most common flowering or gift plants. For further information, get any good book from your local library, bookstore, nursery or florist.

### **African Violet — *Saintpaulia ionantha***

The African violet in its broad range of colors (white, pinks, blues, violets, and variegated combinations) is available in all seasons and will bloom continually with proper care. There are miniature and trailing versions in addition to the standard plants. Blossoms may be single, double, ruffled or crested.

**Location** Bright diffused light is recommended although in winter African violets can tolerate direct sun if you are careful. Too strong a light will scorch the foliage. The temperature should be average to warm with night temperatures not below 16 - 18°C. African violets prefer high humidity. They respond well to artificial lighting; place them under fluorescent lights for 12 - 16 hours to insure continual bloom.





african violet



amaryllis

**Watering and Soil** Do not overwater African violets; the soil only needs to be moist. The potting mixture should be light, have a high humus content and must be well-drained.

**Culture and Reflowering** With adequate light African violets will flower continuously. Longer daylengths encourage more profuse flowering. If the plants fail to bloom you may need to provide more light or humidity. Check that you are not overwatering, which rots the roots and causes the buds and foliage to dry up. Use a fertilizer designated especially for African violets or a general houseplant fertilizer that is high in phosphorous. Overpotting will cause more leaf growth than flower development. Temperatures too high or too cool can prevent flowering. You should have only a single crown per pot for flowering. Divide multiple stems and repot individually.

### **Amaryllis — *Hippeastrum* hybrid**

Large pink, red, orange or white lily-like flowers develop from this tropical bulb. You may buy the amaryllis as a bulb in the fall or winter and pot and grow it yourself.

**Location** Amaryllis tolerates bright indirect light or direct sun. The night temperature should not be cooler than 10 - 13°C. Daytime temperatures may be warm.

**Watering and Soil** Use any soil mix that permits good drainage. Provide uniform moisture.

**Culture and Reflowering** Plant the bulb so that about one-third of it is above the soil level. You may expect the amaryllis to flower in 4-6 weeks. The pot should not be larger than 15 cm in diameter. When the flowers dry up remove the entire flower stalk. The foliage must, however, be kept growing for the summer by watering and fertilizing regularly. This is necessary to maintain vigor of the bulb so you will be able to force it into bloom again. You may put the plants outside in the garden for the summer. In the fall when the leaves begin to die back, stop watering and let the soil dry out completely. Bring indoors; the bulb will now be dormant. Plant again in winter (after at least a 2-month dormant period). Water sparingly until growth appears (2 weeks). The flowers may take longer to appear this time (about 6 - 8 weeks). Amaryllis can be successfully reflowered for several years.

## **Azalea — *Rhododendron* hybrids**

The azalea is a flowering woody shrub available in a wide range of both solid and variegated colors (whites, reds, pinks, corals, salmons) lasting for a 1-2 month period. The blossoms should be at least halfway open at time of purchase or they may not open in the home.

**Location** Azaleas require the brightest indirect light. Direct sun may burn blossoms. Cooler temperatures are preferred — 10 - 16°C at night and 16 - 18°C during the day. Azaleas demand high humidity.

**Watering and Soil** Keep potted azaleas constantly moist but do not allow water to remain in the saucer. Azaleas must have an acid soil. At least one-half the soil mix should be peat moss. The acidity of the soil can also be maintained by watering with 1 teaspoon of vinegar in 1 L every 2 weeks or by dusting with 1/4 teaspoon of sulphur on the soil surface once a month.

**Culture and reflowering** After flowering continue regular watering and maintain light and temperature conditions. Vegetative growth is best if azaleas are placed outside in a shady area of the garden. Complete pruning back of shoots and trimming to shape by mid-July. Flower buds form in the summer and fall. Provide constant moisture and fertilize regularly.

When cooler nights persist bring the plant indoors, water, fertilize less and keep it cool (5 - 10°C) for 6 or more weeks until flower color shows. Place in brighter light; blossoms will open in 3-4 weeks.

## **Bromeliads — *Bromeliaceae* family**

There are many different colorful species of these exotic long-lived flowering houseplants. The pineapple is a member of this family.

**Location** The bromeliads tolerate shade, partial shade or bright indirect light. The day temperature should be average to warm and the night temperature cooler (16 - 18°C), although they will tolerate lower temperatures. Average humidity is sufficient.

**Watering and Soil** With potted bromeliads keep the soil moist but allow it to dry slightly between waterings. Those species with natural vase-like cups should contain water at all times. To avoid damage from salts and other chemicals, try to use rainwater or distilled water. Bromeliads prefer a porous potting medium with lots of humus, in which soil itself is not essential. Use mixtures of peat moss, perlite, leaf mold, sand, etc. The medium should be slightly acid. Little fertilizing and repotting is necessary as they grow slowly.

**Culture and Reflowering** The bromeliad is unique in that it only flowers once. Each side shoot has the potential to flower and can be separated from the parent and grown in its own pot; most will flower naturally when they reach a mature size. To stimulate flowering try ethylene gas, most readily supplied by enclosing a ripe apple with the plant in a plastic bag for about a week; this may give results a month or two later.

### **Christmas Cactus (Easter Cactus, etc.) — *Schlumbergera* species**

This ornamental cactus produces red, white, pink or orange flowers for several weeks.

**Location** The cactus likes bright light, with full sun in winter. It likes temperatures of 17 - 18°C at night and 18 - 22°C during the day. Average humidity is sufficient.



azalea



bromeliad

**Watering and Soil** While the plant is in bloom, keep the soil slightly moist. At other times allow it to dry between waterings. A light, well-drained soil is essential.

**Culture and Reflowering** After flowering, water and fertilize during active growth of spring and summer. The natural flowering period is in the late fall after a period of cooler, drier and shorter days. To initiate flower bud development for Christmas, provide cool night temperatures (10 - 13°C) without exceeding day temperatures of 18°C. Don't extend natural daylight with artificial light during October and November; 14 hours of continuous total darkness are required. When buds appear watering can be increased, fertilizing resumed (half-strength) and more light provided.

## **Chrysanthemum — *Chrysanthemum morifolium***

Chrysanthemums are available year round in a wide range of forms (daisy, quilled, spider, etc.) and colors (pastels through bolder colors). They are considered a good value as the flowers last several weeks.

**Location** Place pot mums in a bright spot, direct sun in winter. They like cool temperatures: 18°C during the day, and 10 - 16°C minimum at night. Keep them out of hot or cold drafts.

**Watering and Soil** Keep this plant constantly moist but do not allow water to remain in saucer. Pot mums prefer rich porous soil that provides good drainage.

**Culture and Reflowering** Florists' chrysanthemums are varieties that have been forced in greenhouses and will not live outside over winter. A few hardier varieties may survive if well protected. To carry a mum over



Christmas cactus



chrysanthemum

for a second blooming, remove the blossoms as they fade, then cut back all shoots to 10-15 cm. Continue to grow in bright light. In summer, the pot can be plunged into a sunny spot in the garden. Fertilize every 2-3 weeks for the summer. Complete all pruning to branch and shape the plant by early summer. Pruning later than this will not allow time for flower buds to mature and develop. In the fall, lift the pots and place indoors in a bright location and provide 14 hours of continuous, uninterrupted darkness for 10 to 12 weeks. Smaller side buds should be pinched off (disbudded) to encourage better development of the terminal buds. The results of forcing a second time may be disappointing, as the growth is usually quite leggy.

## **Cineraria — *Senecio cruentus***

The flowers of the cineraria most closely resemble daisies. They come in a wide range of both pastel and brilliant colors, in pinks, blues and purples. The flowers often completely cover the foliage.

**Location** Cinerarias need bright indirect light. Avoid direct sun. They prefer cooler temperatures, not exceeding 19°C during the day and not below 5 - 7°C at night.

**Watering and Soil** Never allow the soil to dry out thoroughly as cinerarias wilt readily. Use any well-drained soil mix. You do not have to fertilize while in bloom.

**Culture and Reflowering** The leaves deteriorate rapidly after flowering. The plant cannot be kept and reflowered. The cineraria is treated as an annual, and is usually discarded when no longer in bloom. You may, however, start seeds in the summer or fall, and gradually pot up the individual plants. The final pot size should not be larger than 15 cm in diameter. Flower buds form if night temperatures are kept around 13 - 16°C for about 3-4 months. Night temperatures warmer than this prevent flower initiation. Daytime temperatures may be 13 - 16°C. Long hours of daylight also encourage flowering.

## **Cyclamen — *Cyclamen persicum***

For delicate beauty in the fall and winter, the whites, reds, pinks and violets of the cyclamen are perhaps the best choice. The attractive heart-shaped leaves develop from the partially buried corm. Cyclamens will produce new flowers for 1-3 months.

**Location** Cyclamens prefer bright indirect light and humid air. They must be kept as cool as possible (16 - 18°C during the day and 10 - 13°C at night) for continuation of bloom. The average house temperature is too high.



cineraria



cyclamen

**Watering and Soil** The soil must be well drained and have a high humus content which should be kept uniformly moist. Avoid wetting the foliage or crown of the plant, as it is subject to crown rot.

**Culture and Reflowering** Pull out the stalks of spent flowers as they fade. Feed the plant a diluted solution of plant food every 2 weeks while it is in bud and bloom. After flowering, cyclamens require a rest period. Gradually reduce amount and frequency of watering as leaves die down. Remove old foliage and allow to remain completely dry for about 90 days. Then replant in new soil, ensuring that the upper half of the corm is above the soil level. Place in bright light and water as necessary. Flowers may be expected in the late fall.

### **Easter Lily — *Lilium longiflorum***

### **Hybrid Lilies — *Lilium* species**

Pure white Easter lilies are, of course, the traditional flower for Easter. However, hybrid lilies in colors such as red, orange and yellow are available for Mother's Day.

**Location** Keep lilies in a bright cool window where daytime temperature is 16 - 18°C.

**Watering and Soil** Provide moisture as soil begins to dry. Lilies do well in ordinary potting soil and with average humidity.

**Culture and Reflowering** The blooms will last longer if the anthers (the yellow pollen-bearing pods) are removed from the center of the

flowers. Cut off flowers as they fade. Because lilies have already been forced out of their natural season they cannot be forced again indoors. Keep the plants in a bright location until spring and plant directly into the garden soil where they may bloom again late in the season. Easter lilies are unlikely to overwinter.

## **Gardenia — *Gardenia jasminoides***

The gardenia is an attractive woody plant that can become quite large with glossy dark green leaves and very fragrant creamy white flowers. This rather sensitive plant does not do well in average home conditions; it is a true greenhouse plant.

**Location** Keep gardenias in a bright sunny window and at a temperature of 21 - 23°C during the day but about 17 - 18°C at night. Night temperatures warmer than this will reduce flower bud development and encourage the buds to abort. Cooler night temperatures will cause yellow leaves. Any sudden change in air temperature, exposure to drafts or lack of humidity will also cause the buds to drop. Very high humidity (70 - 75%) is essential.

**Watering and Soil** Keep the gardenia plant constantly moist. Mist water over the foliage every day and maintain good drainage. Since the soil must be acid, make up a solution of ammonium sulphate (1 level teaspoon to 1 L of water) and water with this once a month during March to November.

**Culture and Reflowering** Feed mild solutions of soluble plant food when in bud and flower. If the relatively inflexible temperature and humidity requirements are met gardenias will naturally rebloom in the fall and winter when the days are shorter.

## **Gloxinia — *Sinningia speciosa***

Rich and velvety in appearance, the gloxinias are members of the Gesneriad family. They come in an assortment of both solid and combinations of colors, in a succession of bloom.

**Location** Gloxinias require bright indirect light. They may also successfully be grown under fluorescent lights. They prefer a warm humid environment, with minimum night temperatures of 16 - 18°C.

**Watering and Soil** Gloxinias like a light, loose airy soil that drains well and can be kept pleasantly moist, not wet. The foliage can be damaged by water splashed onto it.



Easter lily



gloxinia

**Culture and Reflowering** After flowering reduce watering when the leaves start to die back. The gloxinia requires a rest period for 2-4 months. During this time keep the tuber under low light and the soil completely dry. After this period, repot, planting the tuber at soil level in a porous mixture and resume watering as new leaves grow. Flowers will appear in about 3 months. Gloxinias can be fed with a diluted solution of plant food every 2-4 weeks when in bud and flower. Avoid overwatering, which causes buds to abort.

### **Hydrangea — *Hydrangea macrophylla***

The hydrangeas are available around Easter and Mother's Day in pastel pink and blue. Large round clusters of flowers form at the top of woody stems and last for 1-2 months.

**Location** Hydrangeas require a bright indirect light and do well in the average to cool environment, minimum at night 10 - 13°C. They need average humidity.

**Watering and Soil** Keep the soil uniformly moist. A general potting soil that will drain well is satisfactory. For pink blooms the soil acidity should be relatively neutral (pH 6.2-6.5). Blue hydrangeas will develop in more acid conditions (pH 4.5-5.0).

**Culture and Reflowering** Fertilize and water regularly throughout the summer. Buds form when temperatures are maintained below 18°C (16 - 18°C) for 6 weeks. Further development occurs for the next 6 weeks at temperatures of 5 - 7°C in continuous darkness, in effect the winter



dormancy period. After these steps hydrangeas can be forced into bloom at temperatures of 16°C at night and 18 - 21°C during the day, taking about 3 months.

## **Jerusalem Cherry — *Solanum pseudo-capsicum***

An ornamental plant, this has rather inconspicuous white flowers. The blossoms are followed by colorful round fruits resembling cherry tomatoes that last a long time. The fruit of this plant is poisonous and should be kept out of the reach of children and pets.

**Location** Provide bright indirect light to full sun. A cool, sunny window is ideal (18°C day; 10-13°C night). Humidity is beneficial.

**Watering and Soil** The soil, a general well-drained mix, can approach dryness between waterings. However, constant moisture is usually recommended.

**Culture and Reflowering** Jerusalem cherries need to be pruned back and repotted each spring. During the summer, feed them twice a month with soluble plant food if kept indoors. Since this plant does not flower or set fruit very readily indoors, it is best to summer it in the garden, burying it to the rim of the pot in a sunny location. Pinch back (remove) terminal growth until July. Flowers will appear in the summer. Before any danger of frost, bring the plant in and place it in a cool location and in bright light (but not direct sunlight) for about a month. Keep it constantly moist by mist spraying the foliage every day. Do not fertilize at this time.

Leaf drop and fruit drop are usually caused by too much water, poor light, too dry an atmosphere or insufficient light.

Usually, the Jerusalem cherry will not last longer than two or three seasons. Gather the fruit as it drops and plant the seeds in the spring to have new plants as replacements.

## **Kalanchoe — *Kalanchoe* species**

An attractive succulent plant, some varieties of kalanchoe are very compact, with long-lasting floral clusters in red, pink, orange, yellow and violet.

**Location** Kalanchoes need bright diffused light or full sun. Minimum night temperature should be 10 - 16°C.

**Watering and Soil** Allow the soil to dry out between waterings. More frequent watering is necessary while in bloom. Any well-drained soil mix is recommended.



hydrangea



Jerusalem cherry

**Culture and Reflowering** Faded blossoms should be removed. During periods of active growth fertilize regularly (every 2-4 weeks), and pinch back growing tips to maintain fullness. To initiate flower formation a long-night treatment for about 4 months is required. Provide cool night temperatures (16°C) and uninterrupted complete darkness for at least 14 hours each night.

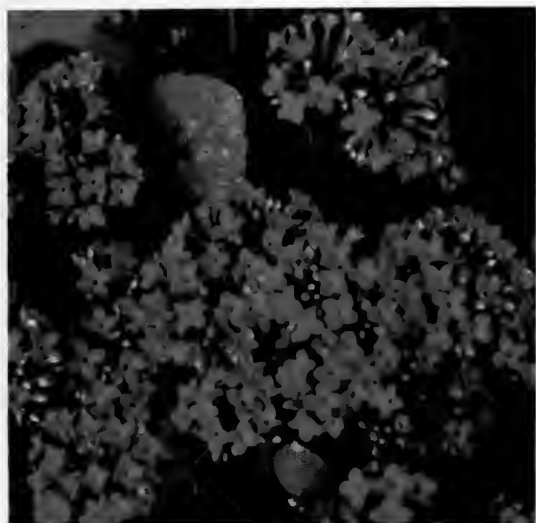
### **Miniature Orange — *Citrus mitis***

The miniature orange is an everbearing plant, meaning that it flowers and sets fruit all year long. Both the very fragrant flowers and 2.5-5 cm fruit can be on the plant at the same time. The bittery-acid fruit is edible and can be used in beverages or for making jam, jelly or marmalade.

**Location** Full sun is essential; its lack causes foliage to drop and retards formation of blossoms. Provide average room temperature and humidity.

**Watering and Soil** The soil should contain some humus and be kept constantly moist. If the soil medium is allowed to dry out some of the leaves will drop. This fruit tolerates a fair amount of fertilizer which should be supplied regularly during periods of active growth.

**Culture and Reflowering** Orange trees grow very well when placed outside for the summer. Transplant as often as necessary (every year or two) into a pot that is slightly larger than the last. If the flowers do not develop fruit you may have to pollinate them yourself by brushing the pollen of one flower onto another.



Kalanchoe

### **Miniature Rose — *Rosa* species**

Potted miniature roses are most frequently seen on the market for Mother's Day and are available in typical rose colors. Blooms are 1-3 cm across.

**Location** Roses need full sun or a very bright spot in the home with average temperatures, minimum at night of 10 - 13°C.

**Watering and Soil** The soil should contain humus and permit good drainage.

**Culture and Reflowering** High light intensity encourages continual bloom. For best results, miniature roses can be placed outside in the full sun for the summer. Water and fertilize regularly. Prune back in the fall. If sufficient light cannot be provided during the winter, place the plant in a cool or unheated well-lit room to give it a rest period. A well-protected miniature rose can also be planted permanently in the garden.

### **Ornamental Peppers — *Capsicum annum* species**

These are attractive little plants with numerous peppers that change color from yellow to orange to red.

**Location** Peppers should be placed in the direct sun or bright diffused light and prefer average to warm temperatures. Night temperatures should not fall below 16°C.

**Watering and Soil** Keep this plant moist but not wet. The foliage can be sprayed to maintain humidity. A well-drained soil mix containing peat moss is recommended.

**Culture and Reflowering** Bud drop is usually due to insufficient light or too dry a soil. After the plant has grown fruit, cut each shoot back by about one-third its length to encourage new growth. Usually, ornamental peppers are discarded after they defoliate naturally.

New plants are started from seed and once established are pinched back to encourage branching. Fertilize monthly until flowering.

### **Pocketbook Plant — *Calceolaria herbeohybrida***

Masses of small pouch-shaped flowers in red, orange or yellow cover this plant.

**Location** The *Calceolaria* prefers a cool environment with plenty of bright diffused light. Night temperatures may fall as low as 5 - 7°C and day temperatures should not exceed 19°C.

**Watering and Soil** Never allow the soil to dry out completely because a wilted pocketbook plant is slow to recover. Keep the soil evenly moist. The soil mix should contain some humus and allow for good drainage. You do not need to fertilize during flowering.

**Culture and Reflowering** The pocketbook plant is treated as an annual and is normally discarded after flowering because the leaves die back rapidly. New plants are propagated from seed in late summer for spring flowering. To initiate flowering you must provide cool temperatures (13 - 16°C at night and 16 - 19°C during the day) for 3-4 months in a brightly-lit spot.

### **Poinsettia — *Euphorbia pulcherrima***

The traditional Christmas flowering plant, the poinsettia comes in red, pink and white. Plants can reach a large bushy size. The 'flowers' are actually colored bracts and the true flowers are the tiny yellow (or creamy) botanical structures quite visible in the center of the bracts. If these true flowers have already fallen off, the plant is not as fresh. The color of poinsettias, however, is long lasting.

**Location** Place poinsettias in a bright sunny window but close to glass to keep cool (18°C). Keep them out of hot or cold drafts.

**Watering and Soil** Soak the plant well (but do not allow it to sit in water for any period of time), then allow to dry out a little between



miniature orange



poinsettia

waterings. Watch the leaves; when they show a tendency to droop, soak the plant again. Poinsettias prefer rich soil with plenty of humus, one recommended medium consisting of equal parts of soil, peat, and perlite.

**Culture and Reflowering** Poinsettias can be reflowered annually with the proper cultural care.

When the bracts fade (usually in January to March) cut back the plant by one- to two-thirds, leaving at least a 15 cm stem. For best growth place it outside in the garden in full sun and fertilize regularly (every 3-4 weeks). Cut back the stems frequently to encourage bushiness. Bring the poinsettia indoors before night temperatures reach 5°C and place in a cool bright location.

Poinsettias flower naturally in the fall in response to the longer nights. To reflower in time for Christmas, the plant must be subjected to a short day — long night routine for about 60 days. It must be in complete darkness for 14 hours nightly and in a sunny cool spot for up to 10 hours during the day. October 1 is the time to start this photoperiod treatment. Once color develops on the bracts, the plant can tolerate exposure to artificial lighting at night and be placed in a more prominent position in the home. The long night routine of 14 hours darkness can be discontinued at this point.

Temperatures below 15°C, too dry a soil or sudden fluctuations in temperature will cause yellowing of leaves and premature leaf drop. If transported outside in cool weather, the plant must be protectively wrapped.

### **Primroses — *Primula malacoides* (fairy primrose); *Primula polyantha* (polyanthus)**

*Primula malacoides* is treated as an annual (discarded after flowering) and has flowers in white, pink, and purple hues. *Primula polyantha*

has a wide color range that includes red, orange and yellow and is fairly easy to reflower.

**Location** The primulas do best in bright indirect light, high humidity and cool temperatures. The daytime temperature should not exceed 19°C. The nighttime temperature may range from 7 - 16°C.

**Watering and Soil** Keep the soil uniformly moist. Any well-drained soil mix with some peat moss is satisfactory. Fertilize occasionally.

**Culture and Reflowering** To reflower *primula malacoides* you must start new plants from seeds planted in the fall for winter blossoming. The primulas are short-day plants. That is, they flower during the shorter days of winter.

*Primula polyantha* can be reflowered successfully indoors and kept as a houseplant or it may be planted outdoors in a shady spot in the garden. It will bloom in spring. Polyanthus may be propagated by either seeds or division.

## **Reiger Begonia — *Begonia hiemalis***

The Reiger begonia flowers for several months at a time, producing bright blossoms of red, orange, or yellow that are about twice the size of wax begonias. There are two types of Reiger begonias: erect (Schwabenland) and pendulous (Aphrodite).

**Location** This begonia prefers bright light but not direct sunlight, except in winter. Also, it prefers to be cool (18°C).



primrose



Reiger begonia

**Watering and Soil** Keep this plant moist but do not overwater, which may cause the stems to rot off at the soil level. The soil mix should contain humus and be well drained.

**Culture and Reflowering** As flowering tapers off, cut stems back to 10 cm stubs, clear off all plant debris and repot into a slightly larger pot, taking care that the ball of earth is set slightly higher than the surrounding soil, to prevent crown rot. New shoots will grow from the base of the plant and it should blossom again in 3-4 months. Fertilize sparingly each month.

### **Spring Bulbs — *Hyacinthus* sp.; *Crocus* sp.; *Tulipa* sp.; *Narcissus***

Potted spring bulbs may be bought in late winter or early spring. Or, you may buy the bulbs in the fall and force them into bloom yourself.

**Location** To make the blooms last as long as possible you have to keep the plants cool. Daytime temperatures should not exceed 18°C. If you must have them as a specimen on a table during the day or evening, try to prolong the bloom by putting them in a much cooler spot (13°C) for the night. They may be placed in diffused light or the direct sun.

**Watering and Soil** Water regularly so that the soil does not dry out. The soil can be any well-drained potting mix.

**Culture and Reflowering** The potted spring bulbs have been forced out of season and they cannot be forced again indoors. You may plant them in the garden where they will bloom again the following spring. Remove faded flowers but maintain regular watering along with an occasional weak fertilizing until the foliage matures, then transplant to a permanent location in the garden.

If you wish to force your own bulbs you must provide a cold period (5 - 9°C) for 12 weeks during which the roots and the internal parts of the bulb develop. It is possible to buy 'precooled' bulbs when available. Plant large-sized (for best results) bulbs in a pot that is about twice the depth of the bulbs. Label, then water regularly for the 12 weeks. If roots are adequately developed after this cool period (check by tapping contents out of pot), place in low light in the home at 15°C for about a week, then to full light at no more than 18°C.

### **Streptocarpus — *Streptocarpus* species**

The streptocarpus are attractive potted plants with white, pink, blue, or purple flowers that bloom continuously. One species is commonly named Cape Primrose.

**Location** Streptocarpus needs full sun in winter, and bright diffused light at other times. A humid atmosphere is needed. Streptocarpus will bloom most freely at average to slightly cool temperatures, 22°C during the day and 16 - 18°C at night.

**Watering and Soil** Allow the soil to dry between waterings, especially during winter. A limp streptocarpus recovers without any damage but an overwatered one usually dies. A porous, well-drained soil mix containing humus is essential.

**Culture and Reflowering** Fertilize with a half-strength solution monthly during active growth. The frequency and number of blooms increases with daylight. Providing 14 hours of light each day insures continual bloom. Without supplemental light during the winter the streptocarpus will take a short rest period and cooler temperatures than mentioned above are in order.



Streptocarpus



## CONVERSION FACTORS

Metric units	Approximate conversion factors	Results in:
<b>LINEAR</b>		
millimetre (mm)	x 0.04	inch
centimetre (cm)	x 0.39	inch
metre (m)	x 3.28	feet
kilometre (km)	x 0.62	mile
<b>AREA</b>		
square centimetre (cm <sup>2</sup> )	x 0.15	square inch
square metre (m <sup>2</sup> )	x 1.2	square yard
square kilometre (km <sup>2</sup> )	x 0.39	square mile
hectare (ha)	x 2.5	acres
<b>VOLUME</b>		
cubic centimetre (cm <sup>3</sup> )	x 0.06	cubic inch
cubic metre (m <sup>3</sup> )	x 35.31	cubic feet
	x 1.31	cubic yard
<b>CAPACITY</b>		
litre (L)	x 0.035	cubic feet
hectolitre (hL)	x 22	gallons
	x 2.5	bushels
<b>WEIGHT</b>		
gram (g)	x 0.04	oz avdp
kilogram (kg)	x 2.2	lb avdp
tonne (t)	x 1.1	short ton
<b>AGRICULTURAL</b>		
litres per hectare (L/ha)	x 0.089	gallons per acre
	x 0.357	quarts per acre
	x 0.71	pints per acre
millilitres per hectare (mL/ha)	x 0.014	fl. oz per acre
tonnes per hectare (t/ha)	x 0.45	tons per acre
kilograms per hectare (kg/ha)	x 0.89	lb per acre
grams per hectare (g/ha)	x 0.014	oz avdp per acre
plants per hectare (plants/ha)	x 0.405	plants per acre



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